

Date: Monday, 10/23/2006 12:05:25 PM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: X-TUBE EXTRUSION OH-58		
Job Number	: 29110					
Estimate Number	: 10005					
P.O. Number	: N/A		Part Number	: D6005128		
This Issue	: 10/23/2006	S.O. No. : N/A	Drawing Number	: D6005 REV A		
Prsh Rev.	: NC		Project Number	: N/A		
First Issue	: N/A		Drawing Revision	: A		
Previous Run	: 26549		Material	: N/A		
Written By			Due Date	: 1/30/2007 Qty: 13 Um: Each		
Checked & Approved By						
Comment	: Est Rev:C 04.06.15 Added tolerance to Step 2 KJ/JLM					

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
1.0	PG	PURCHASING
Comment: PURCHASING		
	Issue P/O: <u>7339</u>	<u>U</u> <u>06-10-25</u>
	a) Order as per Dwg D6005	
	b) Material: 2.750 x 0.375 wall 7075-T6/T6511 (WW-T-700/7 or QQ-A-225/9 or QQ-A-200/11) seamless aluminum tube	
	c) Minimum ultimate tensile strength = 77 ksi	
	d) Minimum tensile yield strength = 66 ksi	
	e) Tolerance are per ASTM B210 (see details on Dwg D6005)	
	f) Material certification required	
2.0	D6005128P	Crosstube material
Comment: Qty.: 1.0000 Each(s)/Unit Total : 13.0000 Each(s) Crosstube material		
3.0	PACKAGING 1	PACKAGING RESOURCE #1
Comment: PACKAGING RESOURCE #1 Receive & Inspect For Transit Damage Ensure material certification is attached		
4.0	QC6	DIMENSIONAL CHECK
Comment: DIMENSIONAL CHECK Ensure Material certification comply to Dwg D6005		
	<u>PC 11/3/23</u>	<u>14</u>
	<u>EN 07/03/26</u>	<u>14</u>

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA:  Date: 01/31/28
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Drawing Name: X-TUBE EXTRUSION OH-58

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Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

6.0 QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

7.0 PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

MB 07/03/27 14

8.0 QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

MB 07/03/28

(14)

Job Completion



MB 07/03/28

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

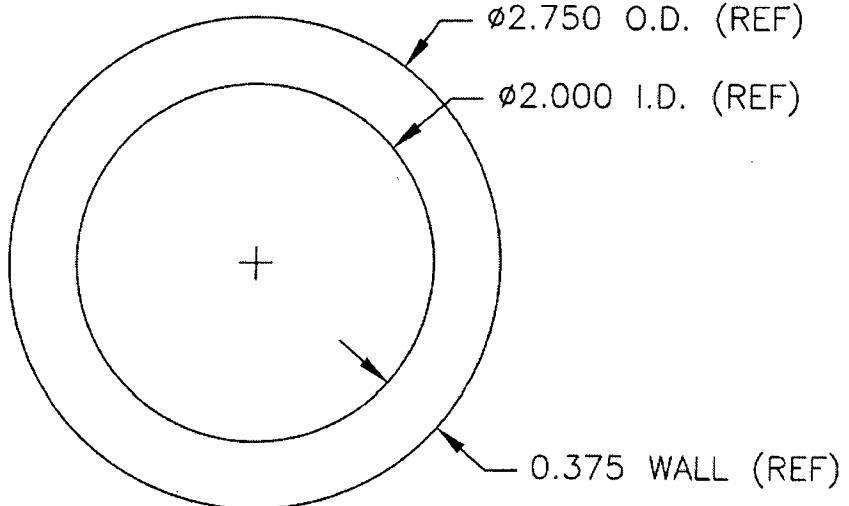
NOTE: Date & initial all entries

DART

DESIGN <i>CP</i>	DRAWN BY <i>CP</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>+</i>	APPROVED <i>+</i>	DRAWING NO. D6005	REV. A SHEET 1 OF 1
DATE 00.11.17	TITLE CROSSTUBE MATERIAL		SCALE 1:1
A	00.11.17	NEW ISSUE	

SPECIFICATION CONTROL DRAWING

RELEASED
00.11.24 *OK*



NOTES

- 1) D6005-XXX CROSSTUBE

 LENGTH

WHERE XXX IS LENGTH IN INCHES
 EG. 128" LONG TUBE: D6005-128

- 2) MATERIAL: 2.750 OD x 0.375 WALL 7075-T6/T6511 (WW-T-700/7 OR QQ-A-225/9 OR QQ-A-200/11) SEAMLESS ALUMINUM TUBE.
 MINIMUM ULTIMATE TENSILE STRENGTH = 77 ksi
 MINIMUM YIELD TENSILE STRENGTH = 66 ksi
- 3) TOLERANCES ARE PER ASTM B210 AS FOLLOWS:
 O.D.: ± 0.006 MEAN (± 0.012 INCLUDING OVALITY)
 WALL: ± 0.015 MEAN (± 0.038 INCLUDING ECCENTRICITY)
 LENGTH: XXX $+0.125/-0.000$
 STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH
- 4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 5) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1

SHOP COPY
 ENGINEERING
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 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO. 29110

invoice
31742

page: 3
date: 2.16.2007
customer 40980

Surface Finish max. RMS 25

Tolerances per ASTM B210 / your drawing D6003

Tubes protected with corrosion protective oil

Tubes line marked

Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit	value	USD
004	18,000	PC	278,34	PC	5.010,12	

AWU article: 19796 / Tariff no. 76082081

Customer article: D6004-115 2.500 X 0.350 X 115

product: TUBES / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	63,500 mm	Tol.	+0,300	-0,300
tol. for mean OD			+0,150	-0,150
inner diameter:	45,720 mm			
wall thickness:	8,890 mm	Tol.	+0,890	-0,890
fixed length	2921,000 mm	Tol.	+3,175	

inspection cert.acc. to EN10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,25 mm / 304,8 mm / RMS outer 25

tol. on quantity +15 % -15 %

2.500" OD 0.350"Wall, 115" lengths

Part Number D6004-115 crosstube

Surface Finish max. RMS 25

Tolerances per ASTM B210 / your drawing D6004

Tubes protected with corrosion protective oil

Tubes line marked

Packing: seaworthy wooden cases

item	quantity	unitprice	USD	unit	value	USD
005	14,000	PC	375,95	PC	5.263,30	

AWU article: 17954 / Tariff no. 76082081

Customer article: D6005-128 2.750 X 0.375 X 128

product: TUBES / seamless extruded / EN AW-7075 / round

condition: T 6511 / AMS-QQ-A-200/11

outer diameter:	69,850 mm	Tol.	+0,300	-0,300
tol. for mean OD			+0,150	-0,150
inner diameter:	50,790 mm			
wall thickness:	9,530 mm	Tol.	+0,970	-0,970
fixed length	3251,000 mm	Tol.	+3,175	

test report acc. to EN 10204/3.1 / RM 531 / Rp0,2: 455

straightness 0,25 mm / 304,8 mm / RMS outer 25

tol. on quantity +15 % -15 %

2.750" OD 0.375" Wall, 128" lengths

Abnahmeprüfzeugnis 3.1 - EN 10204:2004

Inspection Certificate 3.1 - EN 10204:2004 / Certificat de Reception 3.1- EN 10204:2004

Kunde: Dart Aerospace Ltd.
Client: 1270 Aberdeen Street
Produkt: Rohre nahtlos gepresst
Product / Produit: Tubes seamless extruded
Spezifikation: AMS - QQ - A - 200/11E; Spezifikation Dart Aerospace 6005
Werkstoff: 7075
Alloy/Alliage: D6005-128 2.750 x 0.375 x 128
Abmessung
Size / Dimension

Zeugnisnummer: 155/07

Cert No.: / No. du certificat:

Bestellnummer: PO 00002339

Order No. / No. de commande

Auftrag: 21531/5

Our Reference/Notre Reference:

Zustand: T 6511

Temper/État

2,750 INCH x 2,000 INCH x 0,375 INCH x 128,000 INCH

Kennzeichnung: ALUnna - Cert No. 155/07 - 7075 - T 6511 - Cast No. 80006 - AMS - QQA 200/11 - 2.750" OD X 0.375" Wall - Heat
Marking/Marquage: No. 912/01 - Lot 21531/5-1 PO. 00002339

Lieferung: 14 pcs. lbs Country of Manufacture: Germany
Delivered Material / Matériel délivré: 511

1. Chemische Analyse

Chemical Analysis / analyse chimique

Charge/ Cast No.	min. max.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Zr	Bi	Sn	Ni
		0,40	0,50	1,2 2,0	0,30	2,1 2,9	0,18 0,28	5,1 6,1						
80006		0,096	0,178	1,37	0,031	2,48	0,183	5,82	0,037	0,004	0,014	0,001	0,001	0,0001

Hydrogen content: 0,10 ccm/100 g Al

Elements without indication < 0,01 %

2. Mechanische Eigenschaften

Mechanical Properties / Valeurs Mécaniques

Anforderungen Requirements	tensile (Rm) ksi	yield (Rp0,2) ksi	elongation 2" %	elongation A %	Hardness HB	Heat No.
	min. max.	77,0	66,0			
1	84,970	78,300	10,0		166	912/01 - 14 pcs.

RMS outside 25 - max. 13,7 μ "

**Ergebnis der
Prüfungen:** Es wird bestätigt, daß die Lieferung geprüft wurde und den Vereinbarungen bei der Bestellannahme entspricht

Test results: We confirm that the delivery has been tested and applies to the agreements made on receipt of the order
Resultats: Nous confirmons que la livraison a été contrôlée et correspond avec les conventions faites à la réception de la commande

KroosD



Certified acc. to DIN EN ISO 9001:2000, valid until 2009-03-27
 Certificate No.: 001959 QM

09.02.2007



Abnahmebeauftragter

Aluminiumwerk Unna AG, Uelzener Weg 36, 59425 Unna, Germany

Packinglist ALUnna AG

Customer PO	PO. 00002339
ALUnna ref. no.	21531/5
Date:	02.15.07

We hereby declare that the wooden packing material are totally free from bark and apparently free from live plant pests.

Boxmarking:

Dart Aerospace PO. 00002339
D 6005 - 1:28 Made in Germany
Dest. Hawkesbury Canada